other hand avoids back pressure by using the **propeller blades inclined in a spiral twist to induce a vortex in a chamber**, thus inducing movement of gas through the chamber at a high rate.

As the examiner notes, Chang fails to disclose a chamber having a flow cross section substantially 75% to 80% greater than the flow cross section of the inlet tube. For this element, the examiner has relied upon Weiss, but Weiss has no propeller blades at all and certainly **no propeller blades inclined in a spiral twist to induce a vortex in a chamber.** Applicant submits that Weiss has nothing to do with an internal combustion engine, but in fact is a system for exhausting air from a vacuum pump for purposes of sound suppression and it is the sound of sucking air which Weiss seeks to dampen, and not the rapid removal of products of combustion from an engine. Applicant submits that Weiss is non-related art which a person having skill in exhaust systems for internal combustion engines would not consider relevant.

In the accompanying Listing of Claims, applicant presents herewith new base Claims 70 - 72, which are similar to cancelled Claims 67 - 69, respectively, which cure the Section 112 objections raised by the examiner to Claims 67 and 68 as noted in Section I above. Additionally, these new article Claims 70 and 71 add the following limitations:

–the inlet tube is now defined at being at "one end of the shell" (Claim 70) and in flow communication "at one end" with the inlet tube (Claim 71)–

–the blade are "arranged substantially inclined in a spiral twist relative to the path of said exhaust combustion gases" (Claims 70 and 71)--

The new method claim 72 provides that

–the "inlet (is) attached at its one end to one end of" a chamber–

–the blade assembly is disposed "in a spiral twist relative to the path of ... existing gases".

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As discussed above, Chang's vanes are arranged medially of the tube and chamber (if the central area of the muffler can be considered a "chamber" (and there is doubt of that), Chang's "vanes" are arranged in line with the flow of gas and certainly not inclined and there is no hint of a spiral twisting of the gas flow. Weiss offers no structure like a propeller or vanes anywhere and there is no remote suggestion for placing a propeller or vanes anywhere in that assembly.

All the other claims remaining in the application are dependent upon one of these new independent Claims 70-72, and should be allowable because they include the limitations discussed above. Claims 43, 47, 49, and 51 are dependent upon new base Claim 70. Claims 52 and 56 are dependent on new base Claim 71.

Applicant respectfully urges the examiner to review the declarations of David Arlasky and Frank Arlasky previously presented in this application, which clearly indicate substantially improved torque, mileage and horsepower from exhaust systems embodying the invention. In such a crowded art, these improvements deserve consideration. The references of record, cited and not cited, do not teach providing structure at the entry to the exhaust chamber which results in a twisted path of exhaust gases, causing a vacuum vortex effect which drives the gases rapidly through the exhaust chamber - and that is what the invention is all about.

Reconsideration of the rejection is respectfully urged in view of the present amendments. Kindly charge extension and other fees in this application to Deposit Account 06-0040 of the undersigned attorney.

Respectfully,

MARTIN FAIER, Attorney for Applicant

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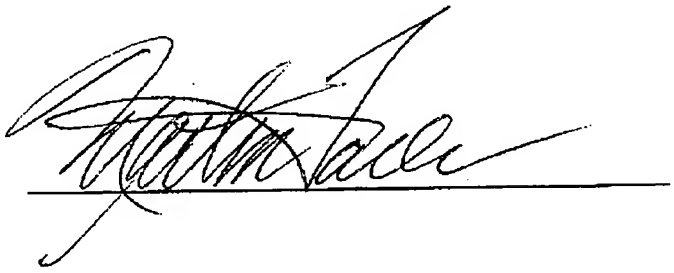
Certificate of Submission via Fax

I certify that this paper and the accompanying Listing of Claims was sent via Fax phone 571-273-8300, the fax phone provided for the Art unit in which the above application is pending, on January 10, 2008, in accordance with the Rules.



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LISTING OF CLAIMS

In accordance with Rule 1.121, a complete claim listing is presented below. A status identified precedes each claim.

1-42 (Cancelled)

43. (Currently Amended) The exhaust system according to **Claim [[67]]** 70, wherein said rotatable propeller type blade assembly is mounted on a Teflon-filled bronze bearing that is rotatably mounted on a shoulder screw.

44-46 (Cancelled)

47. (Currently Amended) The exhaust system according to **Claim [[67]]** 70, wherein said rotatable propeller type blade assembly is comprised of multiple blades.

48. (Cancelled)

49. (Previously Presented) The exhaust system according to **Claim 47**, wherein said blades of said rotatable propeller type blade assembly are arranged substantially at about a 30 degree spiral twist relative to the path of said exhaust combustion gases.

50. (Cancelled)

51. (Currently Amended) The exhaust system according to **Claim [[67]]** 70, wherein said sound suppression materials are selected from the group consisting of fiberglass, glass wool, copper wool, copper strands, steel wool and a combination thereof.

52. (Currently Amended) The device recited in **Claim [[68]]** 71, wherein said exhaust chamber system is joined directly to an internal combustion engine.

53-55 (Cancelled)

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56. (Currently Amended) The device recited in **Claim [[68]]** 71, wherein said blade**[[s]]** **assembly** **[[are]]** **is** set between 20 - 60 degrees relative to the path of said exhaust gases.

57-69 (Cancelled)

70. (New) A high performance exhaust system for removing combustion gases from an internal combustion engine comprising:

a shell;

a tubular chamber within said shell;

a sleeve in said shell;

sound suppression materials in said sleeve;

said tubular chamber having a substantially constant interior diameter and being perforated with apertures to about 40 - 80% porosity;

an inlet tube subassembly fastened at its one end to one end of said shell in communication with said tubular chamber;

an outlet in said chamber remote from said inlet tube for permitting combustion gases to exit said system;

a single rotatable propeller type blade assembly in said inlet tube having its blades arranged substantially inclined in a spiral twist relative to the path of said exhaust combustion gases, said rotatable propeller assembly being seated in but not blocking said chamber and capable of rotation when said combustion gases pass from said inlet tube into said tubular chamber,

rotation of said propeller assembly inducing passage of exhaust gases through said expansion chamber to exit through said outlet,

the length of said chamber being substantially greater than its diameter, said chamber having a flow

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cross section substantially 75% to 90% greater than the flow cross section of said inlet tube, so that gases entering said chamber are swirled into a tightly spun vortex thus creating a vacuum drawing gases through said chamber at an accelerating rate to exit said outlet.

71. (New) A device for increasing the efficiency of an internal combustion engine having an exhaust for gases wherein back pressure of exhaust gases exerted on said engine is reduced, said device comprising:

an inlet tube for exhaust gases in flow communication with said engine exhaust,

a chamber having a substantially constant interior diameter for receiving exhaust gases in flow communication with said inlet tube, one end of said inlet tube being connected to one end of said chamber,

an outlet tube at an end of said chamber remote from said inlet tube for exiting gases from said expansion chamber; and

a single blade assembly having its blades arranged substantially inclined in a spiral twist relative to the path of said exhaust combustion gases and being adapted to move said exhaust gases into said chamber without blocking entry into said chamber;

wherein the length of said chamber is substantially greater than its diameter,

said chamber having a flow cross section substantially 75% to 90% greater than the flow cross section of said inlet tube,

so that gases entering said chamber are swirled into a tightly spun vortex thus creating a vacuum drawing gasses through said chamber at an accelerating rate to exit said outlet.

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72. (New) A method for improving the performance of an internal combustion engine exhaust system by encouraging the flow of combustion gases to exit said engine comprising the steps:

providing an inlet attached to an engine and at one end of said inlet to one end of a chamber having a substantially constant interior diameter attached to said inlet, the length of said chamber being substantially greater than its diameter, said chamber having a flow cross section substantially 75% to 90% greater than the flow cross section of said inlet, and an outlet from said chamber remote from said inlet,

attaching at said inlet one end a single rotatable propeller having a blade assembly arranged angularly disposed in a spiral twist relative to the path of said exiting gases toward said chamber within said exhaust system without materially blocking the flow of exhaust gases from said engine;

rotating said propeller when exhaust gases pass from said inlet into said chamber, and

swirling exhaust gases entering said chamber responsive to rotating said propeller into a tightly spun vortex thus creating a vacuum drawing gasses through said chamber at an accelerating rate to exit its outlet without materially inducing back pressure on said engine.

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